CLAIM

1. A honeycomb structure comprising:

honeycomb segments separated by porous partitions and having circulation holes through the honeycomb segments in an axial direction;

a spacer positioned between neighboring honeycomb segments of the honeycomb segments; and

a bonding layer located between honeycomb segments where the spacer is positioned and bonding the neighboring honeycomb segments,

wherein the spacer has Young's modulus in a range of 0.1 to 1.5 GPa,

wherein a ratio of area of the spacer to area of the bonding layer between respective neighboring honeycomb segments is in a range of 0.2 to 30%.

2. The honeycomb structure according to claim 1,

wherein the spacer has porosity of 35 to 90 %.

3. The honeycomb structure according to claim 2,

wherein the spacer includes a pore-forming material.

4. The honeycomb structure according to claim 2 or claim 3,

wherein the spacer is formed of ceramics.

5. The honeycomb structure according to claim 1,

wherein the Young's modulus is in a range of 0.15 to 1.2 GPa

6. The honeycomb structure according to claim 1,

wherein the ratio of area of the spacer to area of the bonding layer is in a range of 0.4 to 25 %.

7. A method of manufacturing a honeycomb structure, comprising the steps of:

positioning a spacer with Young's modulus of 0.1 to 1.5 GPa on a joining face as an outer peripheral face of a honeycomb segment which is separated by a porous partition and has circulation holes through the honeycomb segment in an axial direction, with a ratio of area of the spacer to area of the joining face in a range of 0.2 to 30 %;

plastering a bonding material on the joining face having the spacer fixed to the joining face;

stacking another honeycomb segment on the joining face to form a honeycomb-segment stacked assembly; and

applying a pressure to the honeycomb-segment stacked assembly from the outside to bond the honeycomb segment and said another honeycomb segment to each other.

8. The method of manufacturing a honeycomb structure according to claim 7,

wherein, as the spacer, a spacer with porosity of 35 to 90 % is used.

9. The method of manufacturing a honeycomb structure according to claim

8,

wherein the spacer is controlled in porosity by a pore-forming material.